

## **REMARKS**

### **I. Introduction**

With the addition of new claim 22, claims 8 to 22 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

### **II. Rejection of Claims 8 to 21 Under 35 U.S.C. § 112**

Claims 8 to 21 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. It is respectfully submitted that these claims sufficiently comply with the written description requirement for at least the following reasons.

In the underlying PCT application, the term “nacheinspritzung” (*see, e.g.* page 8, line 31) is used which translates to “post injection”. “Nach” means post or after, and is a reference to time. The term “post injection” therefore refers to an injection that occurs later in time from a previous injection, and is supported by the underlying PCT application.

In view of the foregoing, it is respectfully submitted that claims 8 to 21 sufficiently comply with the written description requirement for at least the above reason. Accordingly, withdrawal of this rejection is respectfully requested

### **III. Rejection of Claims 8 to 21 Under 35 U.S.C. § 103(a)**

Claims 8 to 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of DE 198 38 466 (“Lenfers et al.”) and U.S. Patent No. 3,768,259 (“Carnahan et al.”). It is respectfully submitted that the combination of Lenfers et al. and Carnahan et al. do not render unpatentable the present claims for at least the following reasons.

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied.

First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be

found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). As clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As explained herein, the Final Office Action does satisfy these requirements of § 103 as to all of the features of the claims.

Claim 8 relates to a method for operating a broadband lambda sensor for determining an oxygen concentration in the exhaust gas of an internal combustion engine operated with a fuel-air mixture including, repeatedly reversing the polarity of the pump voltage during at least the lean operation to create a temporary reversal of direction of the pump current, wherein the repeated reversal of polarity of the pump voltage is carried out during the duration of a post fuel injection in the lean operation of the internal combustion engine.

The combination of Lenfers et al. and Carnahan et al. does not disclose or suggest these features. The Examiner admits, on page 4 of the Office Action, that Lenfers et al. “fails to teach the engine to be in lean operation during time following a fuel injection.” Instead, the Examiner cites Carnahan et al. as allegedly disclosing this feature. However, nowhere does Lenfers et al. or Carnahan disclose that the **repeated reversal of polarity of the pump voltage** is carried out during the **duration of a post fuel injection** in the lean operation of the internal combustion engine.

That is, Lenfers et al. and Carnahan et al. focus exclusively on lean operation of the internal combustion engine and do not disclose, or suggest, providing clocked pump current polarity reversal in post injections, which ultimately no longer corresponds to a lean operation from the temporal point of view. While Carnahan et al. may disclose regulating exhaust gas passing through a reactor by

introducing secondary air into the exhaust gases prior to the reactor, nowhere does Carnahan et al. disclose or suggest using clocked pump current polarity reversal during post injection. Carnahan et al. is not even concerned with using reversal of polarity of pump voltage to prevent, for example, rich drift, as in the present application, and has no need for reversal of polarity of the pump voltage. Only with the assistance of hindsight, can the Examiner attempt to arrive at the presently claimed subject matter by the proposed modification of Lenfers et al. in view of Carnahan et al.

Furthermore, since the sensor possibly regenerates automatically in the cited references due to the changed mixture in the cavity, the polarity-reversal measure would not even be required in post injections.

For all of the foregoing reasons, the combination of Lenfers et al. and Carnahan et al. does not disclose or suggest all of the features of claim 8. As for claims 9 to 21, which ultimately depend from claim 8 and therefore include all of the features included in claim 8, it is respectfully submitted that the combination of Lenfers et al. and Carnahan et al. does not render unpatentable these dependent claims for at least the reasons more fully set forth above in support of the patentability of claim 8.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

#### **IV. New Claim 22**

Claim 22 has been added herein. New claim 22 does not add any new matter and is fully supported by the present application, including the Specification. Claim 22 depends from claim 8 and therefore is patentable over the references relied upon for at least the reasons more fully set forth above.

**V. Conclusion**

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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